

# Overhaul Merak engine mounts (Ver Jan2016)

Any comments for clarification, corrections and improvements are quite welcome which I will incorporate in a new version.

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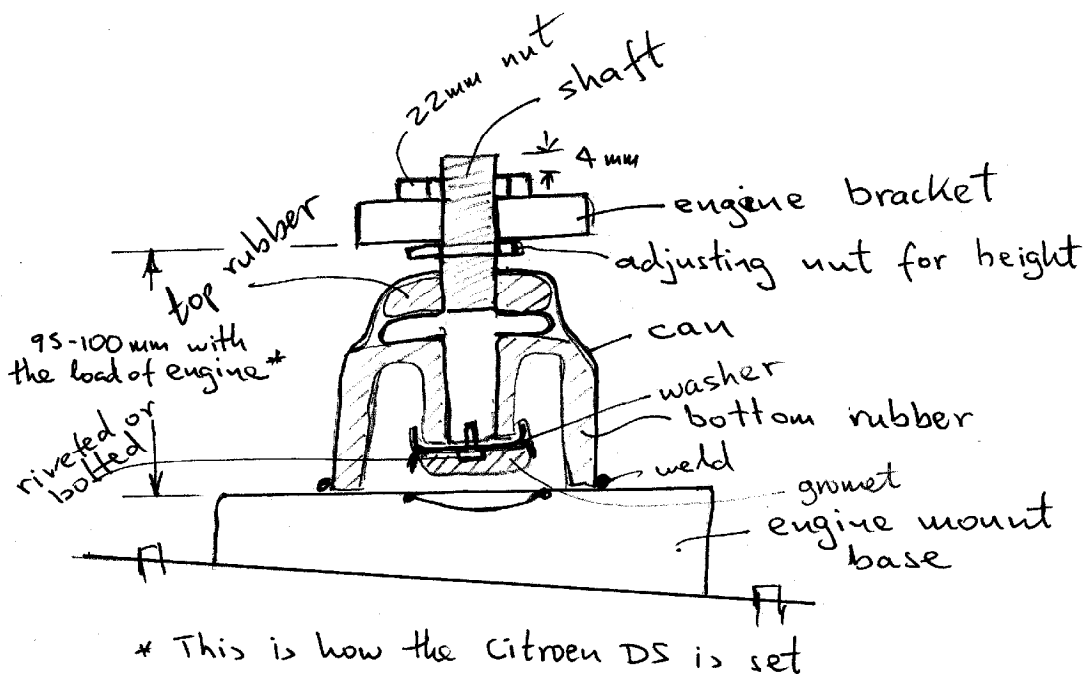
Here I will explain how to remove and overhaul the Merak engine mounts without removing the engine.



1070020 ENG.MOUNT RUBBERSET (upper + lower DS per sida (ett motorfäste)



Here is my schematic of the x-section of the engine mount



This is how the engine mount looks like and the rubber parts which need to be replaced for the overhaul.

- Disconnect battery + terminal from battery. This way you will be able to unbolt the starter and move it forward to get access to the engine mount.
- Loosen all the bolts (Parts manual table 11 bolts 30) on the gearbox mount so it will not stretch the gearbox mount when you lift the engine up.



- Using a 20mm thick wooden board large enough place it on top of a floor jack and position it under the engine sump. The board is placed between the jack and the sump. The objective is to spread the load from the jack to a big area on the sump especially on the edges of the sump where is stronger.
- Using the 22mm spanner (and socket were permits) undo the top nuts from the engine mounts.
- Undo the two nuts securing the starter motor and pull it forward as far as you can so you get enough space to remove the LH engine mount. You need to remove the heat shield (Parts manual Table 7 part 62) as well.



- Lift the engine slowly a bit at a time and make sure that it does not stretch the oil pump hoses (Parts manual Table 5 parts 12 and 13) and the water hoses (Parts manual Table 6 parts 28 and 29). Ensure that the engine is supported by the jack.
- The maximum you can lift the engine is a 2-3 cm and is limited by airbox hitting the body in the engine bay. Also it will stretch the hoses much.
- Undo the 3 bolts (Parts manual Table 15 part 37) which secure each the engine mount on the chassis.
- The engine mounts cannot be taken out yet because the engine was not raised far up. You need to remove the engine brackets from the engine (Parts manual Table 2 parts 64). You might need to remove the exhaust heat shields as well to get more space around the mounts.
- Take the two engine mounts out.



- Mark the position of the cup part relative to the rest of the mount and then using a grinder cut the welds at the base on the mounts.
- Remove the old rubber out and clean the interior of the can. Use rust





converter and then repaint the interior of the cans.



- As you can see there are 2 rubber pieces for each mount. Unfortunately the kit I have has only the big rubbers so I had to reuse the small rubbers again (they are not in a bad shape anyway). Be careful to place the top rubbers the correct way back into the can. According to the instructions, some mounts come with a thick top rubber. The new rubber should not protrude from the metal can more than 3 mm before closing. In case they protrude more than 3mm you might need to shave a bit from the top rubber (this is the case the mount came with thick top rubber).
- To remove the washer from the base of the shaft, use a large drill to drill the rivet at the base of the shaft. Drill and tap the end of the shaft for a retaining screw. The shaft is made up from a very tough material. According to the instructions, use oversize tap drill to prevent breakage of the tap. Use drill 7/32 inch for a 1/4 -20 tap. For my case I used metric equivalents (ie 6mm screw). Place a drop of locktite when you secure the bolt so that it will not come loose. After you make threads on the hole use an appropriate bolt to secure the base. Grind a bit of the hole in the rubber grommet so that the head of the bolt fits in the washer and then secure the grommet back on the base of the mount bolt. I presume its function of the grommet is to limit the downward movement of the rubber.



- The instructions say that you must rivet (it does not generate heat) the cup on the base of the mount. This is applicable for the DS mount which is different. So you have to weld the cup on the base using a mig welder. Avoid generating too much heat which will destroy the new rubber.
- Spray paint the exterior of the mounts as well as the small plates which limit the amount of dust and water entering into the interior of the mount from the top.



- Place the mounts and the engine brackets back on the chassis.
- Adjust the relative height of the engine with respect to the chassis using the height adjusting nut on the engine mount.
  - The SM manual gives, sitting in the drivers seat, 19.5mm +/- 1.0 RHS and 18.5mm +/- 1.0 LHS (corrected side for the Merak). This distance is from the bottom face of the mounting bracket fitted to the engine to the top face (not the lip) of the mount itself under full load of the engine.
  - Andrew Brodie, quoting the SM manual, gives, sitting in the drivers seat, 26mm +/- 0.5 RHS and 23.5mm +/- 0.5 LHS (corrected side for the Merak). This distance is from the bottom face of the mounting bracket fitted to the engine to the top face (not the lip) of the mount itself, with the mount dangling from a supported engine.

This height difference between the two sides is because the engine is turning clockwise and thus is pressing the RHS. Therefore the height adjusting nut on the bolt on the RH mount is set about 2 - 3 mm higher than that on the LH.





**Heights set for Citroen SM.**

Note that the SM engine mounts are not as reinforced as the ones for the Merak. I am not sure if the extra reinforcement is required.

